## REMARKS

In the specification, the paragraphs [0024], [0025], and [0038] have been amended to correct minor editorial errors made by the patent office or the patentee. Claims 17-18 have further been added to claim that the synchronized phasor values transmitted from the protective relay to the host device may be positive sequence values or Clarke components as described in paragraphs 38 and 39 of the specification. Claims 19-22 have further been added to claim that the synchronized phasor values produced by the calculation system may be positive sequence values or Clarke components as described in paragraphs 38 and 39 of the specification.

In reply to the Office Action of March 30, 2004, independent claims 1, 5 and 13 have been amended to clarify, point out, and more distinctly claim the claimed invention. All of claims 1 through 16 remain in the application. Applicant hereby requests reconsideration of all claims, in view of these amendments and the remarks which follow.

*The Hart Does Not Anticipate Applicants' Claimed Invention.*

Claims 1-16 stand rejected under 35 U.S.C. §102(e) as being anticipated by Hart (U.S. Pat. No. 6,236,949). The office action states that Hart teaches a protective relay comprising an acquisition circuit for obtaining at least one of the following voltage values and current values, from an electric power system; a sampling circuit for sampling the voltage or current values at selected intervals of time, wherein the sampling is based on an absolute time reference, and a communication system transmitting messages containing synchronized phasor values from said protective relay a host device.

Applicants' invention as claimed in amended claims 1 through 16 is readily distinguishable from the Hart reference. The Hart reference describes a device that samples the

voltage or current signals synchronously to the fundamental frequency of the electric distribution system. More specifically, in Col. 17, lines 42-55, Hart describes that a GPS-type signal can be synchronized to the same time reference. Hart notes that "such sampling may not necessarily be synchronous to the fundamental frequency of the electric power signal, thereby potentially introducing errors when the phasors are computed using fast fourier transform techniques." *Id.*

In order to compensate for this fallacy, Hart describes sampling at a frequency which is an exact multiple of the fundamental frequency line. *See* Col. 17, lines 56-67. Hart further describes a preferred embodiment wherein "all the voltage and current sensor devices are configured to sample synchronously to the fundamental frequency of the electric distribution system signal. According to the preferred embodiment, one of the voltage and current sensor devices, e.g. 30A, is selected to act as a reference device for the entire system. The phase of a voltage input of this voltage and current sensor device becomes the reference phasor. The reference voltage and current sensor device computes the precise system frequency and the system 'zero time reference' relative to the GPS-time clock. These values are transmitted to every other voltage and current sensor device, e.g. 30B, 30C, . . . 36C, in the system via the network 100 which in turn set their sampling to be simultaneous and synchronous to the reference system frequency." Col. 18, lines 1-14.

While they are suitable in providing protection without errors due to system operation at off-nominal frequency, Hart's approaches are neither suitable in measuring power system dynamics nor implementing synchronized phasor measurements. Hart's system is deficient in these respects because it samples the voltage or current signals synchronously to the fundamental frequency of the electric distribution system.

In contrast, Applicants' invention describes a system in which the sampling is based on

an absolute time reference. Moreover, the amended claims call for the synchronized phasor values and synchronized voltage and current phasor values being acquired independent of power system frequency as currently amended in claim 1 and claims 5 and 13, respectively. On page 5, lines 7-10 of the specification, Applicants describe that the system of the present invention produces synchronized phasor values which are acquired independent of system frequency. (see also page 6, lines 15-17). This is important because these independent phasor values may be used for certain system-wide protection functions such as monitoring, metering and control functions. Accordingly and clearly distinguishable from the teachings of Hart, Applicants' claimed invention may be suitable for monitoring power system dynamics as synchronized phasor values and synchronized voltage and current phasor values are acquired independent of power system frequency as currently amended in claim 1 and claims 5 and 13, respectively.

The Examiner will appreciate that Applicants have amended independent claim 1 and independent claims 5 and 13 to respectively clarify that the synchronized phasor values and synchronized voltage and current phasor values are acquired independent of power system frequency. Accordingly, Applicant respectfully requests withdrawal of the 102(e) rejection and allowance of all claims

In view of the foregoing, reconsideration and allowance of all pending claims are respectfully requested. If any additional fee should be required for these amendments, the Commissioner is hereby authorized to charge Deposit Account No. 50-1039.

Respectfully submitted,
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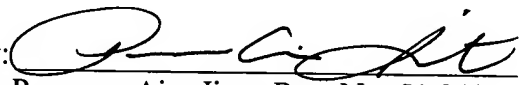
By: 
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